

2 Lb. Polyisocyanurate Foam Sheets

Part # - 440, 441, 442, 443

2 lb/ft³. Pattern-Making and Mold Less Designs



Our 2 lb/ft³ polyisocyanurate foam sheets are rigid, closed cell and are available in varying thickness. They are suitable for most sandwich core applications and are ideal for those which require insulating cores. These foams have the same properties as our #24/25 2lb Mix and Pour foam, and are easily cut and shaped with a sharp knife and sandpaper. Pattern-making has never been quicker! You can also glue together several sheets form blocks as thick as necessary for shaping functional mold less type parts.

Design Considerations

This foam is designed for use in environments where temperatures range from -60°F to +300°F (-51°C to +149°C). However, in non-laminated applications where this foam is exposed to temperatures exceeding 140°F (60°C) and/or relative humidity in excess of 70%, allowances for foam expansion may need to be incorporated into the engineering design. Regardless of operating conditions, a qualified design engineer should review all foam applications.

This foam, like all cellular plastics, will degrade upon prolonged exposure to sunlight. Cover foam material in order to block ultraviolet radiation and prevent degradation. Other coverings to protect exposed foam surfaces from the elements and to meet applicable fire regulations may also be required.

Applications

- Refrigerated food service equipment
- Laminated wall and roof panels
- Commercial and industrial doors
- FRP panels, tanks and shelters
- Truck/Trailer bodies, shipping containers and railcars
- Plugs, patterns and carved products

Environmental Data

This foam is specifically formulated to provide excellent physical properties without the use of chlorofluorocarbon (CFC) or hydrochlorofluorocarbon (HCFC) blowing agents. In compliance with the Montreal Protocol and the Clean Air Act, this foam is manufactured with hydrocarbon blowing agents which have no ozone depletion and no global warming potential.

Safety and Handling

Polyisocyanurate Foam Sheets contain ingredients which could be harmful if mishandled. Contact with skin and eyes should be avoided and necessary protective equipment and clothing should be worn. Individuals should wash with soap and water before eating or drinking. Individuals should observe conditions of good industrial hygiene and safe working practice. For more detailed instructions on handling, please see the MSDS.

Physical Properties (1)(2)(3)	ASTM Method	Typical Values (4)	
		English	Metric
Density, Average	D1622	2.0 lb/ft ³	32 kg/m ³
k-factor (5)			
Initial at 75°F (24°C)	C518	0.165 BTU in/hr ft ² °F	.024 W/m °C
Aged 10 days at 158°F (70°C)		0.185 BTU in/hr ft ² °F	.027 W/m °C
R-value/inch			
Aged 10 days at 158 °F (70 °C)		5.4 Hr ft ² °F/BTU	0.96 m ² °C/W
Compressive Strength			
Parallel	D1621	27 lb/in ²	186 kPa
Perpendicular		20 lb/in ²	138 kPa
Compressive Modulus			
Parallel	D1621	700 lb/in ²	4,823 kPa
Perpendicular		506 lb/in ²	3,486 kPa
Shear Strength			
Parallel	C273	22 lb/in ²	151 kPa
Perpendicular		16 lb/in ²	110 kPa
Shear Modulus			
Parallel	C273	220 lb/in ²	1,516 kPa
Perpendicular		117 lb/in ²	1,219 kPa
Tensile Strength			
Parallel	D1623	41 lb/in ²	283 kPa
Perpendicular		26 lb/in ²	179 kPa
Tensile Modulus			
Parallel	D1623	1,225 lb/in ²	8,440 kPa
Perpendicular		463 lb/in ²	3,190 kPa
Closed Cell Content (6)	D2856	92%	
Water Absorption (by volume)	C272	1.27%	
Water Vapor Transmission	E96	1.8 perms/in	3.3 ng/Pa S m
Dimensional Stability (volume change)			
158 °F (70 °C)+97% R.H./7 days	D2126		+3.0%
212 °F (100 °C)+Ambient R.H./7 days			+1.0%
-40 °F (-40 °C)+Ambient R.H./7 days			-0.5%
Surface Burning Characteristics (7)			
Flame Spread up to 6+(15.23 cm)	E84-03		<25
Smoke Developed up to 6+(15.23 cm)			<185

- (1) Data shown are average values obtained from representative production samples, unless otherwise indicated.
- (2) The suitability of this product for any particular application is the responsibility of the user. The potential user is responsible for performing any pertinent test required to determine the product's suitability for the intended application.
- (3) All properties measured at 74°F (23°C) unless otherwise indicated.
- (4) To be used only as a guide for engineering.
- (5) K-factors will vary with and use conditions.
- (6) Freeze-thaw cycling in wet environments may cause destruction of unprotected foam's closed cell structure, resulting in the deterioration of physical properties.
- (7) Numerical Flame Spread and Smoke Developed ratings are not intended to reflect hazards presented by this or any other material under actual fire conditions. This material is combustible and will burn when exposed to large fire sources.

Information present herein has been compiled from sources considered to be dependable and is accurate and reliable to the best of our knowledge and belief but is not guaranteed to be so. Nothing herein is to be construed as recommending any practice or any product violation of any patent or in violation of any law or regulation. It is the user's responsibility to determine for himself the suitability of any material for a specific purpose and to adopt such safety precautions as may be necessary. We make no warranty as to the results to be obtained in using any material and, since conditions of use are not under our control, we must necessarily disclaim all liability with respect to the use of any material supplied by us.

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